

## **ABSTRACT**

Microfluidic devices are provided that are adapted to retain reactants in first and second chambers that can be in openable fluid communication with each other. The reactants can be reactants necessary to initiate, promote, or catalyze a polymerase chain reaction another nucleic acid sequence amplification, detection, ligation, or endonuclease reaction or a nucleic acid sequencing reaction. Methods and systems are also provided.